

BORSOS, Olga

Dactylorhiza fuchsii Druce and its affinity in the Hungarian and Carpathian floras. In French. Acta Bot. Hung. 5 no.3/4:321-326 '59.
(KEAI 9:5)

1. Institut de Botanique Systematique et Phytogeographie a l'Universite L. Eotvos, Budapest.

(Hungary--*Dactylorhiza*) (Carpathian Mountains)

BORSOS, Olga

Seed germination tests on *Lotus corniculatus* L.s.l. by applying the scarification method. *Acta bot Hung* 10 no.1/2:27-41 '64.

1. Pflanzensystematisches und Geobotanisches Institut der Lorand Eotvos Universitat, Budapest. Submitted November 25, 1963.

BORRGO, 7.

Temporary plant societies in the habitat of the hornbeam and oak, p. 436,
(AZ ERDO, Budapest, Hungary), Vol. 3, No. 12, Dec. 1954.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4,
No. 5, May 1955, Uncl.

BORSOS, Z.

Examination of the structure of lumber on the Hegyhat mountain in Vas County.
p. 41. (Az Erdo, Vol. 6, No. 2, Feb 1957, Budapest, Hungary)

S0: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

BORSOS, Zoltan

Some questions relating to the choice of tree species in the region of Southern Dunantul. Erdo 11 no.12:537-546 D '62.

1. Szombathelyi Allami Erdogazdasag erdomuvelesi csoportvezetoje, Szombathely.

BORGOS, Zoltan

Answering remarks about the selection of tree species. Brdo 13
no.7:331-332 J1 '64.

M

***Spectrographic Analysis of Permalloy.** A. V. Hornova and N. N. Sorokina (Zarod. Lab., 1948, 10, (9), 1096-1100).—[In Russian]. A rapid routine method for the spectrographic determination of Ni, Mo, Cu, Mn, and Si in Permalloy is described, the comparison element in each case being Fe. A Franmer apparatus without interrupter was used, and the second electrode was Al. The line pairs used for comparison were: Ni 3103-489, 3262-595; Fe 3067-244, 3000-951; Mo 2775-4, Fe 2770-299; Cu 3273-982, Fe 3227-747; Mn 2889-58, 2933-063, Fe 2863-702, 2936-906; Si 2516-123, Fe 2518-101. Mean relative errors in a series of determinations were: Mo $\pm 0.8\%$, Ni $\pm 1.1\%$, Mn $\pm 1.8\%$, Cu $\pm 2.8\%$, and Si $\pm 5.5\%$.—N. B. V.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

BORSTNAR, Marijan

The last International Conference for Mental Hygiene and the
situation of the mental hygiene in Yugoslavia. Zdrav. vest.,
Ljubljana 23 no.9-10:241-245 1954.

(MENTAL HYGIENE
in Yugosl.)

BORSTNAR, MARIJAN

SURNAME (in caps); Given Names

Country: Yugoslavia

Academic Degrees: /not given./

Affiliation: Psychiatric Clinic FMS abbreviation not identified
Psihijatrična klinika FMS), Ljubljana; Director (Predstojnik);

~~Source:~~ Professor Dr. Janez KANONI

Source: Ljubljana, Zdravstveni vestnik, No 3-4, 1961, pp 53-55.

Data: "The Electroencephalographic, Psychiatric, and Psychologic
Investigations with Special Regard to Electroconvulsive Treatment."

Authors:

BORSTNAR, Marijan
CVETKO, Branislav
SALI, Borut

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BORSTNAR, MARIJAN

SURNAME (in caps); Given Names

Country: Yugoslavia

Academic Degrees: [not given]

Affiliation: Psychiatric Clinic of the Medical Faculty (Psihiatricna
Klinika Medicinske Fakultete), Ljubljana; Director (Predstojnik)
Prof Dr Janez Kanoni

Source: Ljubljana, Zdravstveni Vestnik, Vol XXX, No 1-2, 1961, pp 22-23

Data: "Electric Sleep."

Authors:

KOSTNAPPEL, Janko
BORSTNAR, Marijan

KOSTNAPFEL, J.; BORSTNAR, M.

Our views on electronarcosis. Neuropsihijatrija 8 no.4:285-289 '60.

1. Bolnisnica za dusevne in zivene bolezni Ljubljana - Polje in Psihla-
tricsna klinika FMS v Ljubljani (Predstojnik: Prof: dr. Janez Kanoni).

(ELECTRONARCOSIS)

BORSTNAR, M.; JAGODIC, A.; CVETKO, B., - (Ljubljana).

Electrocardiographic changes in electric shock. Neuropsi-
hijatrija 11 no. 1:67-78 '63

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BORSTNAR, Marijan; KOBAL, Mara; VITOROVIC, Momcilo

Thromboembolism of the pulmonary artery during treatment with neuroleptics. Zdrav. vestn. 34 no.1:4-7 '65.

1. Bolnisnica za dusevne in zivcne bolezni Ljubljana-Polje (direktor: prof. dr. Janez Kanoni).

BORSUK, A. I. and FISGOYT, V. V.

"Turbines with High Pressure-Stage Ratios." Tekh. Byull. No. 2 (1949)

BORSUK, A.M.

AFANAS'YEV, G.D.; BORSUK, A.M.

Alkaline trachytes in the northwestern Caucasus. Izv. AN SSSR. Ser.
geol. 22 no.3:83-87 Mr '57. (MLRA 10:5)

1. Institut geologii rudaykh mestorozhdeniy, petrografii, mineralogii
i geokhimii AN SSSR, Moskva.
(Caucasus, Northern--Trachyte)

AUTHORS: Afanas'yev, G.D., and Borauk, A.M. SOV/11-59-2-2/14

TITLE: New Data on the Post-Jurassic Magmatism of North-Western Caucasus (Novyye dannyye o posleyurskom magmatizme Severo-Zapadnogo Kavkaza)

PERIODICAL: Izvestiya Akademii nauk SSR, Seriya geologicheskaya, 1959, Nr 2, pp 24-42 (USSR)

ABSTRACT: The article deals with new data on the specific occurrence of Cenozoic magmatism in the western end of the main Caucasian ridge of mountains. The authors give a very detailed description of different magmatogenous rocks of this region, some of which were formed in the Eocene-Miocene period. The following geologists are mentioned: O.S. Vyalov, V.V. Belousov, B.M. Troshikhin, I.V. Belov, and A.P. Lebedev. There are 3 tables, 1 map and 6 photos and 21 references, 16 of which are Soviet, 2 English and 3 American.

ASSOCIATION: Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR (The Institute of Geology of Mineral Deposits, Petrography, Mineralogy and Geochemistry of the AS of the USSR) Moscow.

Card 1/2

BORSUK, A.M.

Geological and petrographical survey of magmatic rocks in the
Pshish-Tuapsinka interfluvium, northwestern Caucasus. Trudy IGM
no.27:210-228 '60. (MIRA 13:7)
(Tuapse District--Rocks, Igneous)

BORSUK, A.M.

Intrusive nature of granodiorite-porphyrtes in the Tuapse region.
Izv. AN SSSR. Ser. geol. 25 no.11:94-104 N '60. (MIRA 13:11)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii
i geokhimii AN SSSR, Moskva.
(Tuapse District--Granodiorite)
(Tuapse District--Porphyry)

BORSUK, Aleksandr Mikhaylovich; AFANAS'YEV, G.D., otv.red.; GRISHINA, T.B.,
red.izd-va; POLENOVA, T.P., tekhn.red.

[Petrology of Mesozoic igneous complexes in the western extremity
of the Greater Caucasus] Petrologiia mezozoiskikh magmaticheskikh
kompleksov zapadnogo okonchaniia Glavnogo Kavkazskogo khrebt. Moskva,
Izd-vo Akad.nauk SSSR, 1963. 158 p. (Akademiia nauk SSSR. Institut
geologii rudnykh mestorozhdenii, petrografii, mineralologii i geokhimii.
Trudy, no.86) (MIRA 16:3)

(Caucasus--Rocks, Igneous)

LEVINSON-LESSING, F.Yu.[Loewinson-Lessing, F.IU.]; STRUVE, E.A.;
PETROV, R.P.; DEMIN, A.M.; BORSUK, A.M.; YEZHOV, A.I.;
AFANAS'YEV, G.D., red.; PETROV, V.P., red.; USTIYEV, Ye.K.,
red.; VLASOVA, L.V., red. izd-va; SAMARCHYAN, L.M., red.
izd-va; SMIRNOVA, Z.A., red.izd-va; GUROVA, O.A., tekhn.
red.

[Dictionary of petrography] Petrograficheski slovar'. Pe-
rer. i dop. R.P.Petrovym i dr. Pod red.G.D.Afanas'eva, V.P.
Petrova i E.K.Ustieva. Moskva, Gosgeoltekhizdat, 1963. 447 p.
(MIRA 16:6)

(Russian language--Dictionaries)
(Petrology--Dictionaries)

BORSUK, A.M.

Out-of-town session of the Council for Studying the Complex
Problem "Structure and development of the earth." Izv.
AN SSSR. Ser. geol. 29 no.4:119-123 Ap'64. (MIRA 17:5)

BORSUK, A.M.; MASURENKOV, Yu.P.

Explosive forms of the intrusive process. Izv. AN SSSR.
Ser. geol. 29 no.4:38-55 Ap'64. (MIRA 17:5)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralogii i geokhimii AN SSSR, Moskva.

BORSUK, A.M.; BORUKAYEV, Ch.B.

Cretaceous gabbroids in the western Caucasus. Izv. AN SSSR.
Ser. geol. 30 no.8:18-32 Ag '65. (MIRA 18:9)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralogii i geokhimi AN SSSR (IGEM), Moskva.

ACC NR: AT6034505

SOURCE CODE: UR/0000/66/000/000/0064/0075

AUTHOR: Afans'yev, G. D.; Bayuk, Ye. I.; Belikov, B. P.; Borsuk, A. M.; Volarovich, M. P.; Zaleskiy, B. V.; Pavlogradskiy, V. A.; Sinyanov, I. Z.

ORG: none

TITLE: Preliminary data obtained by correlating physical properties of rocks from Northern Caucasus with geological and geophysical data

SOURCE: AN SSSR. Otdeleniye nauk o Zemle. Nauchnyy sovet po kompleksnym issledovaniyam zemnoy kory i verkhney mantii. Glubinnoye stroyeniye Kavkaza (Abyssal structure of the Caucasus). Moscow, Izd-vo Nauka, 1966, 64-75

TOPIC TAGS: geophysics, seismic prospecting, petrology, stratigraphy,
/Caucasus

ABSTRACT: The most important of the different age associations of igneous rocks in some of the structural zones of Northern Caucasus (the piedmont region, the foothills, the transverse depression zone, the granitoid zone and the axial zone of the Major Caucasus ridge) are described. The post-Selurian, post-Lower Carbonaceous, pre-Triassic, post-Lower Jurassic, pre-Middle Cretaceous and Cenozoic formations are described. The magmatic geology of Northern Caucasus is compared with geophysical data. A new scheme is suggested for the deep structure of the territory. The ancient basement is shown to consist of Hercynian and older formations. In

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ACC NR: AT6034505

particular, a substage of lower Middle Paleozoic formations is differentiated. It differs greatly in respect to its physical properties from younger rocks of Upper Paleozoic and Mesozoic ages. In the region of the Major Caucasus this substratum has been completely reworked by upper Paleozoic granitic intrusions. The ancient rocks outcrop in a few areas; however, to the East the Caledonian basement is covered by Mesozoic and possibly Upper Paleozoic formations. It is believed that the deep seismic sounding conducted near El'kholovo has located the buried extension of the Caledonia structure of the Western Caucasian foothills. Orig. art. has: 6 figures and 1 table.

SUB CODE: 08/ SUBM DATE: 26Feb66/ ORIG REF: 020/ OTH REF: 001

Card 2/2

BORSUK, A. N.

The Turbine with High Stage Ratio. 1949

Member of the Subcommittee on Turbine Engines for Combined Power
Plants of Scientific Commission on Aviation Terminology of the USSR
Academy of Sciences, 1951-52.

YANSHIN, A.L.; PETRUSHEVSKIY, B.A.; ALEKSANDROVA, M.I.; BORSUK, B.I.;
VOLIN, A.V.; ZUBKOVSKAYA, I.M.; YAKOVLEV, D.I.; BAK, A.G.;
BOROVNIKOV, L.I.; BOTSOVA, Ye.P.; OVECHKIN, N.K.; BESPALOV, V.F.;
SHLYGIN, Ye.D.; SPERANSKIY, B.F.; KHAKHLOV, V.A.; RAGOZIN, L.A.;
DITMAR, V.G.; GORSKIY, I.I., red.; KASSIN, N.G., red.; FOMICHEV,
V.D., red.; DZHEVANOVSKIY, Yu.K., red.; CHIKHACHEV, P.K., red.;
KOMISHAN, I.S., red.; DASHKOVA, A.D., red.; VODOLAGINA, S., tekhn.
red.; VDOVINA, M.P., tekhn. red.

[Geological map of the U.S.S.R., scale 1:1,000,000] Geologicheskaya
karta SSSR, mashtab 1:1,000,000. [Explanatory notes to accompany
sheet] Ob"iasnitel'naya zapiska k listu. L-40 [Kysyl-Orda] (Kysyl-Orda).
1949. 56 p. L-41 [Kysyl-Orda] (Kysyl-Orda). 1946. 20 p.
I-42 [Karsakpai] (Karsakpai). 1949. 42 p. M-41
[Turgay] (Turgai). 1948. 28 p. M-43 [Karaganda] (Karaganda).
1947. 37 p. M-42 [Petrovsk] (Petrovsk) 1947. 27 p.
M-44 [Novosibirsk] (Novosibirsk) 1948. 33 p. O-45
[Tomsk] (Tomsk). 1949. 26 p. O-49 [Kirensk] (Kirensk). 1947.
40 p. Moskva, Gos. izd-vo geol. lit-ry. (MIRA 11:8)

1. Russia (1923- U.S.S.R.) Ministerstvo geologii.
(Geology--Maps)

BORSUK, B. I.

20562 BORSUK, B. I. Osnovnyye cherty geologicheskogo stroyeniya paleozoyskogo fundamenta betpak-dala. Izvestiya akad. Nauk kazakh. SSR, No. 70, Seriya geol., vyp. 11, 1949, s. 51-57.-Rezyume na kazakh. yaz.

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva - 1949

BORSUK, BORIS IOSIFOVICH

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Geologicheskoye stroeniye paleozoyskogo fundamenta vostochnoy chasti
Bet-Pak-Dala (Geological structure of the paleozoic foundation of the
eastern part of Bet-Pak-Dal, by) M. I. Aleksandrov, (i) Boris Iosifovich
Borsuk. Moskva, Gosgeoltekhizdat, 1955.

302, (2) p. diagrs., maps, tables.

At head of title: Leningrad

Vsesoyuznyy Geologicheskiy Institute. Trudy. Novaya Seriya. Tom 7.

Bibliography: p. 301-(303)

BOROVNIKOV, L.I.; BORSUK, B.I., redaktor; KRASNOVA, N.E., redaktor; GUROVA,
O.A., tekhnicheskii redaktor

Lower Paleozoic of the Dzheskazgan-Ulutau region in western Central
Kazakhstan. Trudy VSEGEI no.6:3-249 '55. (MIRA 8:11)
(Ulutau region--Geology, Stratigraphic) (Dzheskazgan region--
Geology, Stratigraphic)

ALEXANDROVA, M.I.; BORSUK, B.I., OGNEV, V.M., redakter, STEPANOVA, L.S.,
redakter; GUROVA, O.A., tekhnicheskiy redakter.

Geological structure of Paleozoic bedrock in the eastern area of
Bet-Pak-Dala. Trudy VSEGEI 7:3-303 '55. (MLRA 9:2)
(Bet-Pak-Dala--Geology)

BORSUK, B.I.; BYKOVA, M.S.

Aleksei Mikhailovich Simorin; obituary. Izv. AN Kazakh. SSR. Ser.
geol. no. 21:131-136 '55. (MLRA 9:8)
(Simorin, Aleksei Mikhailovich, 1902-1955)

BORSUK, B.I.

15-57-8-10386

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 8,
p 2-3 (USSR)

AUTHORS: Borovikov, L. I., Borsuk, B. I.

TITLE: In Appreciation of the Life and Scientific Activity of
Nikolay Grigor'yevich Kassin (1885-1949) [Zhizn' i
nauchnaya deyatel'nost' Nikolaya Grigor'yevicha Kassina
(1885-1949)]

PERIODICAL: Materialy Vses. n.-i. geol. in-ta, 1956, Nr 19, pp 5-15

ABSTRACT: The name of N. G. Kassin is associated with the study
of the geological structure of Kazakhstan, the utili-
zation of its varied raw natural resources and develop-
ment of geological science in that region. A ten-verst
geological map of the "Turgay Strait" (about 30 000
sq km) was drawn up from the data obtained in his
investigations of 1912 to 1913 of the geology and
hydrogeology of the steppe and semisteppe regions in
the Turgay and Irgiz districts. In 1917, at the request
of the Geology Committee, Kassin undertook a geological

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15-57-8-10386

In Appreciation of the Life and Scientific Activity (Cont.)

study of the territory along the Murmansk railroad; during 1918-1924 he carried out a geological survey of the Kirov district, the results of which are found mostly on Sheet 107 of the ten-verst geological map; for this he received the przhival'ski Great Gold Medal in 1930. In 1925 Kassin devised a paleontologically oriented stratigraphic system for the structure of Central Kazakhstan. A group of geologists working under his supervision was the first to establish the paleontological characteristics of the Cambrian and Ordovician deposits, the complex of extrusive formations of the Silurian-Devonian, and also of the pre-Paleocene deposits in northeastern Kazakhstan. Kassin's investigations in Mugodzhary established that a significant part of the section, which had been formerly considered a member of the coal-bearing layer of the Lower Carboniferous, was actually pre-Paleozoic. A number of important metallogenic problems were solved as a result of Kassin's work on determining the age of different intrusions in Central Kazakhstan. He established the lack of congruity in the total scheme of the Caledonian and the Hercynian structures in Central Kazakhstan and clarified the part played by ancient blocks ("platforms" or "masses") in the development of the

Card 2/3

15-57-8-10386

In Appreciation of the Life and Scientific Activity (Cont.)

Caledonian and the Hercynian mineral inclusions of the district. Kassin's observations on the structure of the foundation in the Turgay flexure merit attention. This scientist paid particular attention to the problems of metallogenesis, and the interrelation between metallogenesis and tectonics. He studied the Kazakhstan water resources and the geology of the Karagandin Carboniferous basin.

Card 3/3

D. I. Gordeyev

BORUKAYEV, R.A., akad.; BORSUK, B.I.; KELLER, B.M.; AYTALIYEV, Zh.A.;
BOGDANOV, A.A.; BUBLICHENKO, N.L.; BYKOVA, M.S.; GALITSKIY, V.V.;
MEDOYEV, G.Ts.; MYAGKOV, V.M.; ORLOV, I.V., RUKAVISHNIKOVA, T.B.;
SHLYGIN, Ye.D.; NIKITIN, I.F., uchenyy sekretar'; SENKEVICH, M.A.,
uchenyy sekretar'.

[Resolutions of the Conference on the Unification of Stratigraphic
Charts of the Pre-Paleozoic and Paleozoic of Eastern Kazakhstan]
Rezoliutsiia po unifikatsii stratigraficheskikh skhem dopaleozoya
i paleozoya vostochnogo Kazakhstan. Alma-Ata, Izd-vo Akad. nauk
Kazakhskoi SSR, 1958. 36 p. (MIRA 11:12)

1. Soveshchaniye po unifikatsii stratigraficheskikh skhem dopaleozoya vostochnogo Kazakhstan. Alma-Ata, 1958. 2 Akademiya nauk Kazakhskoy SSR, predsedatel' soveshchaniya po unifikatsii stratigraficheskikh skhem dopaleozoya i paleozoya vostochnogo Kazakhstan (for Borukayev). 3. Zam.predsdatelya soveshchaniya po unifikatsii stratigraficheskikh skhem dopaleozoya i paleozoya vostochnogo Kazakhstan; Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut (for Borsuk). 4. Zam.predsdatelya soveshchaniya po unifikatsii stratigraficheskikh skhem dopaleozoya i paleozoya vostochnogo Kazakhstan; Geologicheskii institut Akademii nauk SSSR (for Keller). 5. Ministerstvo geologii i okhrany nedr Kazakhskoy SSR (for Aytaliyev, Myagkov). 6. Moskovskiy gosudarstvennyy universitet im. M.V. (Continued on next card)

BORUKAYEV, R.A.---(continued) Card 2.

Lomonosova (for Bogdanov). 7. Altayskiy gorno-metallurgicheskiy nauchno-issledovatel'skiy institut Akademii nauk Kazakhskoy SSR (for Bublichenko). 8. Institut geologicheskikh nauk Akademii nauk Kazakhskoy SSR (for Bykova, Galitskiy, Medoyev, Shlygin, Nikitin). 9. Tsentral'no-Kazakhstanskoye geologicheskoye upravleniye (for Orlov). 10. Yuzhno-Kazakhstanskoye geologicheskoye upravleniye (for Rukavishnikova, Senkevich).
(Kazakhstan--Geology, Stratigraphic)

ALEKSANDROVA, M.I.; BORSUK, B.I.; PEREKALINA, T.V.; YAGOVKIN, V.I.

Geology of the Sarysu-Balkhash-Nura watershed. Trudy VSEGEI 32:
7-126 '60. (MIRA 13:11)

(Kazakhstan --Geology)

ABDULKABIROVA, M.A.; ALEKSANDROVA, M.I.; AFONICHEV, N.A.; BANDALETOV, S.M.; BASPALOV, V.F.; BOGDANOV, A.A.; BOROVNIKOV, L.I.; BORSHIK, B.I.; BORUKAYEV, R.A.; BUVALKIN, A.K.; BYKOVA, M.S.; DVORTSOVA, K.I.; DIMBO, T.M.; ZHUKOV, M.A.; ZVONTSOV, V.S.; IVSHIN, N.K.; KOPYATKEVICH, R.A.; KOSTENKO, N.N.; KUMPAN, A.S.; KURDYUKOV, K.V.; LAVROV, V.V.; LYAPICHEV, G.F.; MAZURKEVICH, M.V.; MIKHAYLOV, A.Ye.; MIKHAYLOV, N.P.; MYCHNIK, M.B.; NIDLENKO, Ye.N.; NIKITIN, I.F.; NIKIFOROVA, K.V.; NIKOLAYEV, N.I.; PUPYSHEV, N.A.; RASKATOV, G.I.; RENGARTEN, P.A.; SAVICHEVA, A.Ye.; SALIN, B.A.; SEVRYUGIN, N.A.; SEMENOV, A.I.; CHERNYAKHOVSKIY, A.G.; CHUYKOVA, V.G.; SHLYGIN, Ye.D.; SHUL'GA, V.M.; EL'GER, E.S.; YAGOVKIN, V.I.; NALIVKIN, D.V., akademik, red.; PERMINOV, S.V., red.; MAKINUSHIN, V.A., tekhn.red.

[Geological structure of central and southern Kazakhstan]
Geologicheskoe stroenie Tsentral'nogo i Iuzhnogo Kazakhstana.
Leningrad, Otdel nauchno-tekhn.informatsii, 1961. 496 p.
(Leningrad. Vsesoiuznyi geologicheskii institut, Materialy, no.41)
(MIRA 14:7)

(Kazakhstan--Geology)

BORSUK, B.I.

Geosyncline and platform stages in the development of the Kazakhstan
fold area. Trudy Geol. muz. AN SSSR no.14:155-169 '63.

(MIRA 17:11)

SPIZHARSKIY, T.N.; GRONOV, Yu.Ya.; Prilimani nebstiya: BOROVNIKOV, L.I.;
BORZUK, B.I.; GOREISKAYA, Ye.N.; ZURLOV, Ye.I.; SALOP, L.I.; SHTAL',
N.V.

Paleotectonic maps and the methods for plotting them. Metod.
paleogeog.issn. no.1:228-247 '64. (MIRA 18:6)

BORSUK, B.I.

Most important fold systems in the Kazakhstan fold area and their
structure. Trudy VSEGEI 111:69-85 '64. (MIRA 18:7)

MOLOTOV, B.S.; BORSUK, P., redaktor; KOZLOV, S., tekhnicheskiy redaktor

[Collaboration of workers and peasants in the struggle to reclaim
virgin and idle lands] Sodruzhestvo rabochikh i krest'ian v bpr'be
za osvoenie tselinnykh i zaleshnykh zemel'. Alma-Ata, Kazakhskoe
gos. izd-vo, 1955. 35 p. (MIRA 9:8)
(Reclamation of land)

BARANOV, Mikhail Dmitriyevich; POLYUKHOV, Vladimir Fedorovich; BORSUK,
F., red.; MIKHAYLOV, F., red.; TURABAYEV, B., tekhn.red.

[Points of interest in Kazakhstan] Dostoprimechatel'nye mesta
Kazakhstana. Alma-Ata, Kazakhskoe gos.izd-vo, 1959. 368 p.
(MIRA 13:4)

(Kazakhstan--Description and travel)
(Kazakhstan--Economic conditions)

DZHUSUPBEKOV, S.D., red.; SNEGIN, D.F., red.; BARIKOV, G.A., red.;
GORYACHEVA, A.A., red.; RUSAKOV, I.V., red.; BORSUK, P.,
red.; TURABAYEV, B., tekhn.red.

[Alma-Ata, capital of the Kazakh S.S.R.] Alma-Ata - stolitsa
Kazakhskoi SSR. Alma-Ata, Kazakhskoe gos.izd-vo, 1960. 304 p.
(MIRA 14:3)

(Alma-Ata)

BORSUK, I.

~~SECRET~~

Studies on Hassal's bodies of the thymus in man and in certain other mammals. *Fol. morph., Warsz.* 3 no.1:63-80 Jan-Mar 1952. (CML 23:4)

1. Of the Institute of Histology and Embryology (Head--Prof. Stefan Baginski, M.D.) of Lodz Medical Academy.

BORSUK, Irena

Contribution to the embryogenesis and histophysiology of the
thymus in mammals and man. Folia morphol 21 no.4:509-521
'62.

1. Katedra Histologii i Embriologii, Akademia Medyczna, Lodz.
Kierownik: prof. dr S. Baginski.

*

BORSUK, I.

Coloring of cornification. Folia morphol 22 no.1:69-70 '63.

1. Zakład Histologii i Embryologii, Akademia Medyczna, Łódź.
Kierownik: prof. dr. S.Baginski.

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SHEREMET, I.A.; BORSUK, I.I.

Conveyor galleries of bent corrugated asbestos cement sheets.

Prom.stroi. 41 no.3:38-39 Mr '64.

(MIRA 17:3)

1. Trest Donkoksokhimstroy.

Borsuk J.
Excerpta Medica Sec 16 Cancer Vol. 2/6 June 54

2641. BORSUK J. Klin. otolaryng., Akad. med. Lodz; Zakl. Anat. pat., Akad. med., Lodz.
Przypadek raka o dwóch pierwotnych ogniskach rozwoju A case of cancer with 2 primary
foci Otolaryng. pol. 1953, 7/3 (217-219) Illus. 3

A case of cancer of the nose on the right side, composed of various cells, partly cornifying
and originating from the ethmoid in a woman of 62. She had been operated upon 6 yr.
previously for cancer of the upper lip on the left side. The author supposes that the
patient had 2 primary foci of cancer at different times. Tapiewski - Szczecin

Borsuk

Excerpta Medica 3/2 sec 16 Feb 55 Cancer

442. BORSUK J. and TORZECKI Z. Łódź. Czestosc wystepowania nowotworów krtani w porównaniu z czestoscia nowotworów innych narządów na podstawie badań biopsyjnych *Incidence of neoplasms of the larynx as compared with the incidence of neoplasms of other organs on the basis of biopsy examinations* Otolaryng. pol. 1953, 7/4 (271-274) Tables 3

The authors give the results of 27,120 biopsy examinations: 20,360 in women and 6,760 in men. A total of 6,324 neoplasms were detected: 4,536 in women, 1,788 in men and 164 Krompecher's tumours. Benign neoplasms in women: 2005 (43.72%); malignant in women: 2531 (56.28%); benign neoplasms in men: 694 (38.87%); malignant in men: 1094 (61.13%). The malignant neoplasms of the larynx with men amount to 7.14% while with women to 0.3%. The incidence of larynx neoplasms in women and men is 1:9. The average age of women and men attacked by cancer of the larynx does not differ from the average age of men and women attacked by cancer of other organs.

Borsuk — Łódź

BORSUK, Jozef; TORZECKI, Zenon

Classification of tuberculosis of the palatine tonsils.
Gazeta 22 no.6:381-386 Je '54.

1. Z Zakładu Anatomii Patologicznej Akademii Medycznej w Łodzi.
Kierownik: prof. dr med. A. Pruszczyński. i Kliniki Otolaryngologicznej
Akademii Medycznej w Łodzi. Kierownik: prof. dr med. H. Lewenfiusz.
(TUBERCULOSIS,
*tonsils, classif.)
(TONSILS, diseases,
*tuberc., classif.)

TORZECKI, Zenon; BORSUK, Jozef

Tuberculosis of the palatine tonsils and of the peritonsillar tissue in chronic cavernous progressive pulmonary tuberculosis. Gruzlica 22 no.6:387-392 Je '54.

1. Z Zakladu Anatomii Patologicznej Akademii Medycznej w Lodzi, Kierownik: prof. dr med. A. Pruszczyński i Kliniki Otolaryngologicznej Akademii Medycznej w Lodzi, Kierownik: prof. dr med. A. Radziminski.

(TUBERCULOSIS, PULMONARY,

*cavitation, with tonsillar & peritonsillar tuberc.)

(TUBERCULOSIS,

*tonsils & peritonsillar tissue, in pulm. tuberc.)

(TONSILS, diseases,

*tuberc., in pulm. tuberc.)

TORZECKI, Zenon, Lodz, ul. Pokladowa, 49; BORSUK, Jozef

Relation of tuberculous lesions of the tonsils to tuberculous lesions of the peripheral lymph nodes. Gruzlica 22 no.11: 761-770 Nov 54.

1. Z zakladu anatomii patol. Akad. Med. w Lodzi - kierownik prof. dr. A.Prossynski. Z kliniki otolaryngol. A.M. w Lodzi - kierownik prof. dr. A.Radziminski

(TONSILS, diseases

tuberc. in pulm. tuberc., relation to tuberc. of peripheral lymph nodes)

(LYMPH NODES, diseases

tuberc. in pulm tuberc., relation to tuberc. of tonsils)

(TUBERCULOSIS, PULMONARY, manifestations

tonsils tuberc., relation to tuberc. of lymph nodes)

BORSUK, Jozef; CHOJNOWSKI, Jozef Ryszard

Role of tonsillectomy in disappearance of cardiovascular lesions associated with tonsillitis. Otolaryng. polska 10 no.3-4:455-462 1956.

1. Z Kliniki Otolaryngologicznej, Kierownik: prof. dr. A. Radziminski i III Kliniki Chorob Wewnętrznych, Kierownik: prof. dr. W. Markert A.M. w Łodzi.

(TONSILLITIS, complications,
cardiovasc. dis., eff. of tonsillectomy (Pol))
(CARDIOVASCULAR DISEASES, complications,
tonsillitis, tonsillectomy (Pol))

EXCERPTA MEDICA Sec. 6 Vol. 11/8 Aug. 57

BORSUK J.

4998. BORSUK J., LISIECKA-ADAMSKA H. and MAJCHERSKA B. Klin. Otolaryngol., I. Klin. Chor. Wewn. A. M., Łódź. * Zachowanie się krzywej audiometrycznej u chorych na cukrzycę. The audiometric curve in the diabetic patient POL. ARCH. MED. WEWN. 1956, 26/7 (1159-1166) Graphs 3 Tables 2

In the period from 1952 to 1954 108 patients with diabetes were examined. Pathological changes in the audiometric curve were found in 35 patients. On the basis of the material observed the authors drew the following conclusions: (1) In 1/3 of the patients in the course of diabetes there occurs impaired function of the organ of hearing in the form of decrease of capability of receiving high tones, within the limits from 35 to 60 db. for the frequency of 1,448-11,000 and decreased bone conduction. (2) No parallelism was stated between the degree of impairment of the organ of hearing and the length and severity of the course of diabetes. (XI, 6)

BORSUK, Jozef

Halherbe's epithelioma in the area of the mandibular angle. Otolaryngologia polska 15 no.3:373-376 '61.

1. Z Kliniki Laryngologicznej WAM w Lodzi.

(MANDIBLE neopl) (CHOLESTEATOMA case reports)

BORSUK, Jozef; STEIN, Wladyslaw

Some remarks about the Mekkersson-Rosenthal syndrome. Otolaryng. pol.
16 no.4:595-601 '62.

1. Z Kliniki Laryngologicznej i Neurologicznej WAM.
(TONGUE, FISSURED) (FACIAL PARALYSIS) (GLOSSITIS)

BORSUK, Jozef; ROPIK, Mieczyslaw; SZYMANSKI, Andrzej; MIKSZA, Jan

Auditory apparatus in pulmonary tuberculosis patients treated with streptomycin. Gruzlica 33 no.11:1165-1170 N * 65

1. Z Katedry Ftizjatrii z Klinika Wojskowej Akademii Medycznej (Kierownik podpułkownik dr. med. M. Ropek) i z Kliniki Larungologicznej Wojskowej Akademii medycznej (Kierownik pułkownik prof. dr. med. J. Borsuk).

BORSUK, Kazimierz (Warsaw)

Free vibration of rotations of a cylindrically orthotropic circular plate. Archiw mech 12 no.5/6:649-665 '60.

1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences, Warsaw.

BORSUK, Jozef; STEIN, Wladyslaw; MIKSZA, Jan

Apropos of fissured tongue. Otolaryng. Pol. 18 no.4:503-507
'64

1. Z Kliniki Laryngologicznej Wojskowej Akademii Medycznej
w Lodzi (Kierownik: prof. dr. med. J. Borsuk).

Borsuk, Karol. An example of a simple arc in space whose projection in every plane has interior points. *Fund. Math.* 34, 272-277 (1947).

The results of this paper are contained in the following theorem. There exists in the n -dimensional Euclidean space C_n a simple arc B such that if B' is a subarc of B then there exists an n -simplex Δ' such that every straight line in C_n which intersects Δ' also intersects B' . Taking $n=3$ then every projection (central or parallel) of B into a subset of a plane will contain interior points in that plane. The existence of such arcs indicates that the study of general knots in 3-space by means of their projections is likely to be fruitless.

J. J. Roberts (Durham, N. C.).

Source: *Mathematical Reviews*,

Vol 10, No. 1

Borsuk
Borsuk
Borsuk, K. Concerning the Euler characteristic of normal spaces. Colloquium Math. 1, 206-209 (1948).

Let the normal space A be expressed as a union of a finite number of closed sets, $A_1, \dots, A_n$. Let any nonvoid intersection of these sets be acyclic, i.e., have the same homology groups, with rational coefficients, as a point. Then the Euler characteristic $\chi(A)$ of A exists and is equal to $\chi(N)$, where N is the nerve of the collection $A_1, \dots, A_n$. The proof makes use of Čech's extension to normal spaces of the Mayer-Vietoris formula, but except for this it is quite elementary.

E. G. Begle (New Haven, Conn.)

Source: Mathematical Reviews.

Vol 10 No. 5

Borsuk, Karol. On topological approximation of polytopes.

Ann. Soc. Polon. Math. 21 (1948), 357-376 (1949).

Since no purely topological characterization is known of those spaces which are homeomorphic to polytopes (geometric complexes), the author wishes to define spaces which approximate these spaces. Moreover, he wishes to define the class of all polytopes. Let X be a class of mappings which is transitive, i.e., if f, g are in X , with the range of f equal to the domain of g , then $g \circ f$ is in X . We denote by $K(X)$ the class of all spaces $f(P)$ where f runs through X and P runs through $\mathbb{R}^n$. Then $K(X)$ is called an approximation to the class of polytopes. It is said to be a topological approximation if both the class K of mappings and the class $K(X)$ of spaces can be defined in a purely topological way. Thus, for example, $K_1(X)$ is such a topological approximation, where K_1 is the class of all mappings for which f is transitive and $K_1(X)$ consists of all locally connected compacta. On the other hand, $K_2(X)$ where K_2 is the class of all homeomorphisms, is not known to be topological.

In this paper the following are shown to be topological approximations to the class of all polytopes. (1) The class $K_1(X)$ where X is the class of all r -continuous mappings, i.e., those of the form $h \circ r$ where r is a retraction and h is a homeomorphism. Here $K_1(X)$ consists of all finite-dimensional locally contractible compacta. (2) The class $K_{1,1}(X)$ where $K_{1,1}$ is a suitably defined subset of K_1 , and the class $K_{1,1}(X)$ consists of the class of finite-dimensional compacta having property Δ , i.e., for each neighborhood V of a point, there is a smaller neighborhood U such that each compact set E in V is homotopic to a point in U . (3) The class $K_{1,1}(X)$ consisting of all finite-dimensional compacta which can be decomposed into a finite set of arbitrarily small pieces, any nonvacuous intersection of which is an absolute retract. Here $K_{1,1}$ is another suitably defined subset of K_1 . (4) The class $K_2(X)$ where $K_2 = K_{1,1} \cap K_{1,1}$. It is known that $K_2(X) \subset K_{1,1}(X) \subset K_1(X)$ and $K_2(X) \subset K_1(X)$, all of these being proper inclusions. It is not known whether or not $K_2(X) = K_{1,1}(X)$. E. G. Begle (New Haven, Conn.).

Source: Mathematical Reviews, 1950 Vol 11 No. 2

~~KOROL, /BORZUK, Karol~~

Borzuk, Karol. Correction à mon travail "Sur la courbure
des courbes fermées." Ann. Soc. Polon. Math. 21
(1948), 302 (1949).

In the paper in question [same Ann. 20 (1947), 251-265
(1948); these Rev. 10, 60] the author applies the usual
integral formula for the arc length of a curve. But the
assumptions made on the parametric representation of the
curve do not secure the validity of this formula. Here
sufficiently strong assumptions are given. The only influ-
ence of the error is that the theorem is proved for a slightly
more restricted class of curves than stated in the paper.

W. Fenchel (Los Angeles, Calif.).

Sm. 1948

Mathematical Reviews, 1950. Vol. 11. No. 2

BORSUK, Karol

Borsuk, Karol. On the imbedding of n -dimensional sets
in $2n$ -dimensional absolute retracts. Acta Sci. Math. Szeged 12, Leopoldo Fejér et Frederico Riesz LXX annos
natis dedicatus, Pars A, 112-116 (1950).

Let $m(n)$ denote the smallest integer such that any separable metric space of dimension n can be imbedded in an AR (absolute retract) of dimension $m(n)$. The Menger-Nöbeling theorem shows that $m(n) \leq 2n+1$. Here it is shown that $m(n) \leq 2n$ provided that $n > 0$. In fact, a slightly stronger theorem is proved, in that the $2n$ -dimensional AR can be required to be a subset of the $(2n+1)$ -dimensional Euclidean space. E. G. Begle (New Haven, Conn.).

Source: Mathematical Reviews,

Vol 12, No. 3.

Borsuk, Karol On an irreducible 2-dimensional absolute retract. *Fund. Math.* 37, 137-160 (1950).

An example is presented of a 2-dimensional absolute retract such that any 2-dimensional proper closed subset has an infinite 1-dimensional Betti number. In particular, no proper closed 2-dimensional subset is an absolute retract. The construction of this example is too complicated to outline here. *E. G. Begle* (New Haven, Conn.).

g.m.

Source: *Mathematical Reviews*

Vol 13 No. 1

DORSUK, Karol

Dorsuk, Karol. Set theoretical approach to the dis-
connected theory of the Euclidean space. Fund. Math. 37,
217-241 (1950).

A purely set-theoretic proof is given of the theorem that if A and B are homeomorphic closed subsets of E^n (= Euclidean n -space), then $E^n - A$ and $E^n - B$ have the same number of components. The proof uses a multiplication of homotopy classes of mappings of a closed set $A \subset E^n$ into the $(n-1)$ -sphere defined previously by the author [C. R. Acad. Sci. Paris 202, 1400-1403 (1936)]. Without using any combinatorial topology, it is shown that this multiplication turns these homotopy classes into an abelian group. In particular, if A is the $(n-1)$ -sphere, this group is cyclic with at least two different elements. (Actually, this group is infinite cyclic, but the proof of this fact, which is not needed here, seems to demand combinatorial arguments.) Next it is shown that if $A \subset E^n$, then the number of generators of this group is one less than the number of components of $E^n - A$, which proves the theorem.
E. G. Begle (New Haven, Conn.).

Source: Mathematical Reviews,

Vol 13 No.2

SOC. SCI. Lett. Varsovie C. R. Cl. III. Sci. Math. Phys.
41 (1948), 23-39 (1951). (French. Polish summary)
Définitions et notations: E désigne un espace topologique.
Un "parcours" dans E est une application continue $x = x(t)$ de l'intervalle fermé $I = [0, 1]$ dans E . Un élément y de E est une "c-valeur" de x si $x^{-1}(y)$ contient un vrai sous-intervalle de I dit "c-intervalle" pour x . Une fonction continue et non décroissante $\alpha(t)$ transformant I en lui-même est "compatible" avec $x(t)$ si tout c-intervalle pour α est aussi un c-intervalle pour x ; la fonction α est un "régulateur" de $x(t)$ lorsqu'elle est compatible avec $x(t)$ et que le parcours $x(\alpha^{-1}(t))$ n'a aucun c-intervalle. Deux parcours $x(t)$ et $y(t)$ dans E sont "équivalents", $x \sim y$, s'il existe deux fonctions α et β non décroissantes, transformant I en lui-même de manière continue et satisfaisant à la condition

$$(C): x(\alpha(t)) = y(\beta(t)) \text{ pour tout } t \text{ de } I.$$

Dans le cas où il existe deux fonctions α et β croissantes et satisfaisant à (C), x et y sont "fortement équivalents", $x \approx y$.

But de l'article: Un exemple simple montre que la notion de courbe basée sur la relation d'équivalence forte n'est pas invariante vis-à-vis de la convergence uniforme. Cet article est principalement consacré à la démonstration de la transitivité de l'équivalence forte (Corollaire du Th. 2) et de son invariance vis-à-vis de la convergence uniforme.

Résultats: Th. 1: Soient f et g deux fonctions continues et la distance $\delta = 0$.

Source: Mathematical Reviews, Vol 13 No. 3
BORSUK, KAROL: On the Kinematic Notion of a Curve

deux fonctions continues non décroissantes φ et ψ transformant I en lui-même et satisfaisant à la condition $f(\varphi(t)) = g(\psi(t))$ pour tout t dans I . Th. 2: Soit α un régulateur du parcours $x(t)$ et β un régulateur du parcours $y(t)$. Pour que x et y soient équivalents il faut et il suffit que $x(\alpha^{-1}(t))$ et $y(\beta^{-1}(t))$ soient fortement équivalents. Th. 3: Si $\{x_n\}$ est une suite de parcours dans E , convergeant uniformément vers un parcours x , et telle que $x_n \sim x_1$ pour tout $n = 1, 2, \dots$, alors $x_n \sim x_1$.

Remarques du référent: Les considérations du présent article se trouvent en substance dans les Thèses de M. Fréchet [Rend. Circ. Mat. Palermo 22, 1-74 (1906)] et du référent [Actualités Sci. Ind., no. 885, Hermann, Paris 1941; ces Rev. 7, 67] aux paragraphes consacrés à la représentation paramétrique des courbes. La notion d'équivalence de deux parcours coïncide avec celle du référent [loc. cit., p. 8] lorsque x et y sont envisagés comme représentations paramétriques d'une courbe d'un espace. En effet, si S est une similitude au sens large entre I et $I' = J$, soit $\{S\}$, la courbe représentative de S dans $I \times I'$ est une courbe rectifiable joignant $(0, 0)$ à $(1, 1)$; σ désignant l'arc réduit, les fonctions $t = \alpha(\sigma)$, $t' = \beta(\sigma)$ fournissent la liaison désirée. Cette remarque contient le Th. 2. L'intervention de l'arc réduit de la courbe plane $x = f(t)$, $y = g(t)$ dans le Th. 1 conduit aussitôt au résultat. Enfin le Th. 3 est un cas particulier du Th. II du référent [loc. cit., p. 15] quand E est distancié.

C. Y. PAW (le Cap).

130RSUK, KAROL

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130RSUK, KAROL. Les polytopes, les quasi-polytopes et la topologie générale. Casopis Pěst. Mat. Fys. 74 (1949), 25-31 (1950). (Polish. French summary)
This is an expository paper on the as yet unsolved problem of finding a topological characterization of polyhedra. The class of finite-dimensional absolute neighborhood retracts contains all polyhedra, and in many respects such spaces have the same homology and homotopy properties as polyhedra. But absolute neighborhood retracts can exhibit certain "pathological" properties not possessed by any polyhedra. A number of such properties are described here, and methods are outlined for finding smaller classes of spaces, containing all polyhedra, but excluding some of these pathologies.
E. G. Begle (New Haven, Conn.).

Source: Mathematical Reviews,

Vol 12 No. 7.

Straw post

BORSUK, K.

Hung.

*Borsuk, Karol. Les transformations en sphères et la théorie de la décomposition des espaces euclidiens. Comptes Rendus du Premier Congrès des Mathématiciens Hongrois, 27 Août-2 Septembre 1950, pp. 363-366. Akadémiai Kiadó, Budapest, 1952. (Hungarian and Russian summaries)

Let S_n be the euclidean n -sphere and A a compact space. Denote by (S_n^A) the Borsuk group [C. R. Acad. Sci. Paris 202, 1400-1403 (1936)] whose elements are the homotopy classes of mappings of A into S_n . The object of this note is to show, using a minimum of algebraic arguments, that the number of bounded components of $E_{n+1} - A$ is equal to the rank modulo m of (S_n^A) , where m is the rank of $(S_n^{S_n})$, and hence that the number of bounded components depends only on the topological structure of A and not on the manner in which it is embedded in E_{n+1} .
E. G. Begle.

Borsuk, Karol. Concerning the homological structure of the functional space S_n^X . Fund. Math. 39 (1952), 25-37 (1953).

The Corollary to the main theorem states that if a compact space X of dimension at most k has positive k th Betti number then, for every $m \geq k$, the function space S_n^X of mappings of X into the m -sphere S_m has positive $(m-k)$ th Betti number. The main theorem is a more general theorem of the same sort involving an arbitrary compact space X and true cycles with arbitrary coefficients. Three problems, suggested by this result, are formulated at the end of the paper.
R. H. Fox (Princeton, N. J.).

Borsuk, K.

Hung.

Borsuk, K. On certain mapping of the 2-sphere onto itself. *Ann. Soc. Polon. Math.* 25 (1952), 268-272 (1953).

It is well-known that a mapping of a separable metric space X into the circumference S_1 is inessential if and only if the mapping can be factored into a mapping of X into the line followed by a mapping of the line onto S_1 . In this note an example is given to show that this theorem does not generalize to higher dimensions. A mapping of the 2-sphere S_2 into itself is defined which is inessential but which cannot be factored into a mapping of S_2 into the plane followed by a mapping of the plane onto S_2 .

E. G. Begle (New Haven, Conn.).

Borsuk, K., and Jaworski, J. W. On labile and stable points. *Fund. Math.* 39 (1952), 159-175 (1953).

A point p of a metric space S is homotopically labile if for each $\epsilon > 0$ there is a mapping g of $X \times I$ into X such that $g(x, 0) = x$ for all x in X , $\rho(x, g(x, g(x, t))) < \epsilon$ for all (x, t) in

$X \times I$, and $g(x, 1) \neq p$ for all x in X . The point p is labile if for each $\epsilon > 0$ there is a mapping f of X into itself such that $\rho(x, f(x)) < \epsilon$ and $f(x) \neq p$ for all x in X . The point p is (homotopically) stable if it is not (homotopically) labile. Every homotopically stable point is stable, and the converse is true in absolute neighborhood retracts but not in general.

These notions are applied to the study of Cartesian products. It is shown that if (x, y) is (homotopically) stable in $X \times Y$, then x is (homotopically) stable in X . The converse is an open question, but partial results are obtained by showing first that if A is a compact subset of an n -dimensional space X and if a is a point of A which is linked in A with a compact set $A_0 \subset A - a$, then a is homotopically stable in X , and then by showing that if A_0 and B_0 are closed subsets of the compact spaces A and B and if $a \in A - A_0$ is linked with A_0 in dimension k and $b \in B - B_0$ is linked with B_0 in dimension l , then (a, b) is linked with $A_0 \times B_0 \cup A \times B_0$ in dimension $k+l$.

E. G. Begle.

BORSUK, K.

Mathematical Reviews
Vol. 15 No. 3
March 1954
Analysis

Borsuk, K. An application of the theorem on antipodes to the measure theory. Bull. Acad. Polon. Sci. Cl. III. 1, 87-90 (1953). 2

If f maps the n -ball, Q^n , into the metric space M considered partitioned into $k+1$ sets, $\{M_i\}$, and if $\{A(p) | p \in f(Q)\}$ is a family of measurable sets, suitably restricted, a typical result is: If $k < n$ then for some p_0 , the measures of $\{A(p_0) \cap M_i\}$ are proportional to the measures of $\{A(p) \cap M_i\}$.
D. G. Bourgin (Urbana, Ill.).

7-9-54
LL

BORSUK, K.

Mathematical Reviews
Vol. 15 No. 4
Apr. 1954
Topology

9-13-54
LL

✓
Borsuk, K. Concerning the Cartesian division by manifold.

Bull. Acad. Polon. Sci. Cl. III. 1, 91-94 (1953).

Continuing with his investigations into Cartesian products, the author shows that if C and C^* are two locally connected continua of dimension 1 and if M is a manifold, perhaps with boundary, then $C \times M$ and $C^* \times M$ are homeomorphic if and only if C and C^* are. Combined with an earlier result of the author, this yields the corollary that a factoring of a locally connected continuum Z in the form $Z = X_0 \times X_1 \times \cdots \times X_n$ is unique if $\dim X_0 = 1$ and if each X_i , $1 \leq i \leq n$, is an arc or a simple closed curve.

E. G. Begle (New Haven, Conn.).

BORSUK, K.

A Theorem on Fixed Points

Byul. Pol'sk. AN. Otd. 3, Vol 2, No 1, 1954, pp 15-18

The following theorem is proved: Let A be an acyclical curve, every two points of which can be joined by a simple arc; then every continuous mapping of A onto itself has a fixed point. The proof of the theorem is applied to a subsidiary theorem on a fixed point in a continuous mapping of a uniconherent curve onto itself. As a consequence of these results it follows that every continuous mapping of a unidimensional restricted compact onto itself has a fixed point. (RZhMat, No 5, 1955)

SO: Sum. No 639, 2 Sep 55

BORSUK, KAROL

* Borsuk, Karol, i Szmielew, Wanda. Podstawy geometrii. [The foundations of geometry.] Państwowe Wydawnictwo Naukowe, Warszawa, 1955. 363 pp. zł. 25.00.

1 - F/W

This book deviates from other works with the same title both in content and in the extent to which details often omitted in other books are carried out. MS

It begins with an introduction on the history of the subject and on the very elements of point-set topology. The first four chapters are concerned with absolute geometry, in particular chapter I (pp. 23-74) with the axioms of incidence and order. As an example of a topic usually omitted we mention the topology of the plane obtained by defining the interiors of triangles as neighborhoods. A theorem like the following is at this stage not quite trivial: If a_1, a_2, a_3, a_4 are the vertices of a convex quadrangle and p is the intersection of its diagonals, then a_1 has a neighborhood U_1 such that for $a'_1 \in U_1$ the quadrangle $a'_1 a'_2 a'_3 a'_4$ is convex and has its intersection of the diagonals in a preassigned neighborhood of p . Chapter II (pp. 74-112) treats the axioms of congruence. In Chapter III (pp. 113-158) we find the

(over)

①

Harold Borsuk

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continuity axioms, Legendre's theorems on the angle sums of triangles, and a proof that the space is now metric and homeomorphic to E^2 or E^3 . Chapter IV (pp. 159-200) discusses models of absolute geometry and its non-categoricalness. Chapter V (pp. 201-213) outlines Euclidean geometry, whereas Chapter VI (pp. 214-273) treats hyperbolic geometry in great detail including the derivation of many of the more complicated formulae. Chapter VII (pp. 274-314) gives the foundations of plane and spatial projective geometry without continuity. The final Chapter VIII (pp. 315-346) deals with the continuity axioms of projective geometry and ends with a curiously detailed analysis of Hilbert's example for a non-Desarguesian geometry. A detailed index follows.

2/2

An English edition of this book might well be an answer to the problem of how to acquaint young students with exact reasoning, presenting at the same time a coherent course.

H. Busemann (Los Angeles, Calif.).

Scanned by

BORSUK, K.

~~Borsuk, K.~~

✓ Borsuk, K. What is topology? Wiadom. Mat. (2) 1, 65-74
(1955). (Polish)
Elementary expository paper. S.M.W.

I-P/W

BORSUK, K.

The concept of divisor and of multivalent transformations. In French. p. 81.
BULLETIN, Varsovie, Vol. 3, no. 2, 1955.

SO: Monthly List of East European Accessions, (EEML), LC, Vol. 4, no. 10, Oct. 1955,
Uncl.

Borsuk, K. Sur la notion de dépendance des transformations continues. Bull. Acad. Polon. Sci. Cl. III. 3 (1955), 251-254.

Let A be a compact space, and Y a compact ANR. Denote by Y^A the space of maps of A into Y . Notice that if A is a subspace of X , there is a natural map of Y^X into Y^A defined sending $f \in Y^X$ into $f|_A \in Y^A$. Suppose that Φ is a subset of Y^A . A function $g \in Y^A$ is said to depend on Φ if for every compact space X containing A , $g \in \text{image } Y^X$ whenever $\Phi \subset \text{image } Y^X$. Let $D(\Phi)$ denote the set of functions dependent on Φ . It is clear that if $g \in D(\Phi)$ then so does every element of the homotopy class of g .

The author says that $g \in Y^A$ depends on Φ in dimension m if for every compact space $X \supset A$ such that the dimension of $X - A$ is less than or equal to m , $\Phi \subset \text{image } Y^X$ implies $g \in \text{image } Y^X$. Let $D_m(\Phi)$ denote the set of functions dependent on Φ in dimension m . We have $D(\Phi) \subset D_m(\Phi)$ and that if $m \leq m'$, then $D_{m'}(\Phi) \subset D_m(\Phi)$. We may now state the main result of the author as follows: Theorem. If A is a compact space of dimension less than or equal to n , Y the n -dimensional sphere, m an integer, $n < m < 2n$, and $\Phi = \{f_1, \dots, f_k\}$ where $f_i \in Y^A$, then $D_m(\Phi)$ consists of those functions $g \in Y^A$ such that the homotopy class of g belongs to the subgroup of the Hopf group (n -dimensional cohomotopy group) of A generated by the homotopy classes of $f_1, \dots, f_k$.

J. C. Moore.

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1 - F/W

308

dim

BORSUK, K.

Borsuk, K., and Kosiński, A. Families of acyclic compacta in euclidean n -space. Bull. Acad. Polon. Sci. Cl. III. 3 (1955), 293-296.

Let X be a compactum and Y metric separable. In particular, $Y = E_n$, the Euclidean n -space. Let Φ be upper semi-continuous on $X \rightarrow 2^Y$, where 2^Y refers to the non-empty compact subsets of Y . $F = (X, Y, \Phi)$ is called a family. If $\Phi_2(x) \subset \Phi_1(x)$, then $F(\cdot, \Phi_1)$ prolongs $F(\cdot, \Phi_2)$. Denote by $S(F)$ the family of all prolongations $\{F(X, E_n, \psi)\}$ for which $\psi(X)$ includes all bounded components of $E_n - \Phi(X)$. Let G_m be the group of integers mod m and let $j: \Phi_1(X) \rightarrow \Phi_2(X)$ be the inclusion map. Theorem: If the induced homomorphism on $H_{n-1}(\Phi_1(X), G_m) \rightarrow H_{n-1}(\Phi_2(X), G_m)$ is trivial, then $F_1 = F(\cdot, \Phi_1) \in S(F_2)$. Write $P_m(F)$ for all prolongations whose set $\psi(x)$ are acyclic for the coefficient groups G_m . Suppose (a) $\Phi(x) \cap \Phi(x') = \emptyset$ ($x \neq x'$). Then, Theorem: If the homomorphism h induced by Φ^{-1} on $H_{n-1}(\Phi(X), G_m) \rightarrow H_{n-1}(X, G_m)$ is trivial, then $P_m(F) \subset S(F)$. (A similar result is obtained even when (a) is dropped). Suppose $F_1 \in P_m(F)$. The proof pivots on passing from $\Phi(X)$ and $\Phi_1(X)$ to the graphs of F and F_1 , and so expressing the homomorphism h in terms of a chain of homomorphisms to which the Vietoris-Begle theorem [Begle, Ann. of Math. (2) 51 (1950), 534-543; MR 11, 677] is applicable. Applications are indicated.

D. G. Bourgin (Rome).

2

1 - F/W

ADU

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Borsuk, K.; and Kosinski, A. On connections between the homology properties of a set and of its frontier. Bull. Acad. Polon. Sci. Cl. III. 4 (1956), 331-333.

Let $ACECY$, where A, B are compact, and use (ech theory with compact coefficients. Let $j: A \rightarrow B$ and $i: \text{Bdry } A \rightarrow A$ be the injections. The authors prove the following three theorems: (1) If A is deformable, in Y , into $Y - A$, then $H_k(\text{Bdry } A) = H_k(A) \oplus \text{Kern } i^+$ for every k .

(2) If $H_k(B) = H_{k+1}(B) = 0$, then $H_k(\text{Bdry } A) = H_k(A) \oplus \text{Kern } i^+$. (3) If $i^+ = 0$, then i^+ is onto. J. Dugundji.

Math 2

Sm W
neg

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(Polytopes) (Convex domains) (Hyperspace)
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Concerning the notion of R - neighbours. Bul Ac Pol Mat 2 no. 7:
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(Spaces, Generalized)

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On a generalization of the cohomotopy groups. Bul Ac Pol mat 8
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BORSUK, K. (Warsaw)

On a problem of V. Klee concerning the Hilbert manifolds, Col math 8
no.2:239-242 '61.

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An AR-set with an infinite number of R -neighbors. Bul Ac Pol
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On a family of 2-dimensional AR-sets. Fund mat 51 no.3:283-297 '62.

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Concerning some upper-continuous decompositions of compacta. Bul Ac Pol mat 11 no.8:499-503 '63.

1. Instytut Matematyczny, Polska Akademia Nauk, Warszawa.

OTTO, Edward, prof. dr.; WOLSKA-BOCHENEK, Janina, prof. dr.; SADOWSKA,
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dr.; RYTEL, Zdzislaw, prof. dr.; PIATKIEWICZ, Alesky, prof. dr.;
LEITNER, Roman, prof. dr.; ZAKOWSKI, Wojciech, doc. dr.;
BIENKOWSKA, dr.

Professor Witold Pogorzelski; obituaries. Matematyka Warszawa
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A ~~three-dimensional~~ absolute retract which does not contain
any disk. Fund math 54 no.2:159-175 '64.

ROMAN, L. G.

258T70

USSR/Geology - Coal

21 Feb 53

"New Data on the Stratigraphy and Lithology of the Upper Part of the Coal-Bearing Deposits of the Carboniferous in the Karaganda Basin," V. V. Koperina

DAN SSSR, Vol 88, No 6, pp 1035-1038

According to M. O. Borsuk, the upper part of the coal-bearing strata is florally similar to that of the lower-lying Karaganda formation, and the lowest boundary of the Westphalian layer is the middle of the Karaganda layer. Presented by Acad D. V. Nalivkin.

258T70

BORSUK, M. D.

New data on the stratigraphy of the Karaganda Coal Basin according to
fossil flora. Trudy Lab.geol.ugl. no.2:166-181 '54. (MLRA 8:7)
(Karaganda Basin--Geology, Stratigraphic)

BORSUK, Mariya Osipovna; VASIL'YEV, I.V., redaktor; KRASNOVA, N.E.,
redaktor; POPOV, N.D., tekhnicheskii redaktor.

[Paleocene flora of Sakhalin (of the conglomerate and lower Dui series)] Paleogennaya flora Sakhalina (konglomeratnoi i nizhneduiskoi svit). Moskva, Gos. nauchn.-tekhn. izd-vo lit-ry po geologii i okhrane nedr, 1956. 131 p. (Leningrad. Vsesoiuznyi geologicheskii institut. Trudy, vol. 12). (MLBA 9:8)
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BORSUK, M. O.

15-57-4-4154

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 4,
p 17 (USSR)

AUTHORS: Monakhova, L. P., Aleksandri-Sadova, T. A., Bushmina,
L. S., Zaspelova, V. S., Lyuber, A. A., Borsuk, M. O.

TITLE: The Use of Paleontologic Methods for Studying Coal-
Bearing Formations (K voprosu o primenenii paleontolo-
gicheskogo metoda pri izuchenii uglenosnykh tolshch)

PERIODICAL: Tr. Labor. geologii uglya AN SSR, 1956, Nr 5, pp 58-64.

ABSTRACT: This work is based on data from the eastern part of the
USSR (Karaganda, Kuzbass) and has to do with the fauna
and flora of continental deposits. Spores and pollen
are very important in studying the stratigraphy of the
coal-bearing sequence. This importance stems from the
presence of spores and pollen in the coal beds them-
selves, from their ability to travel through the air
which leads to wide distribution, and also from the fact
that they are well preserved. Insects are widespread in

Card 1/2